

REMARKS

Reconsideration and allowance of the present application are respectfully requested. Claims 1-42 remain pending in the application. By this Amendment claims 1, 19, 22, 31 and 34 are amended.

Applicants acknowledge with appreciation the indication in numbered paragraph 7 of the final Office Action that claims 4-9, 11-14, 24-26, 28, 36, 37 and 39 contain allowable subject matter.

In numbered paragraph 2, page 2 of the final Office Action, independent claims 1 and 34, along with various dependent claims, are rejected as being unpatentable over U.S. Publication No. 2002/0147728 (Goodman et al.) in view of U.S. Publication No. 2005/0075863 (Jiang et al.). In numbered paragraph 3, page 5 of the final Office Action, dependent claims 3 and 35 are rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al. publication, and further in view of U.S. Patent 4,015,087 (Stewart). In numbered paragraph 4, page 5 of the final Office Action, dependent claims 15-18 and 40-42 are rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al. publication, and further in view of U.S. Patent 6,434,520 (Kanevsky et al.). In numbered paragraph 5, page 7 of the final Office Action, independent claims 19, 22 and 31, along with various dependent claims, are rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al. publication, and further in view of the Kanevsky et al. patent. In numbered paragraph 6, page 11 of the final Office Action, dependent claim 23 is rejected as being unpatentable over the Goodman et al. publication in view of the Jiang et al.

publication and Kanevsky et al. patents, and further in view of the Stewart patent. These rejections are respectfully traversed.

Applicant has disclosed a method and system for automatic classification of music (e.g., paragraphs [0029] and [0030]). A received music piece can comprise a segment of a musical work; an entire musical work, such as a song; or a combination of musical segments and/or songs (e.g., paragraph [0030]). The received music piece is labeled as singing music or instrumental music, based on whether human singing voice is present (e.g., paragraph [0031]). Any number of classes of music pieces and hierarchical structure of the music pieces can be selected for controlling the classification process (e.g., paragraph [0029]). As exemplified in Fig. 2, a music piece 200 can be typed as an instrumental 202 music piece, and can be further classified as an instrument classification 212.

The foregoing features are broadly encompassed by Independent claim 1, which recites, among other features, determining a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components; and classifying and labeling the music piece into a specific category of the determined music type. Independent claims 22 and 34 similarly recite determining a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components; and classifying and labeling the music piece into a specific category of the determined music type. Independent claim 19 recites selecting parameters for controlling the classification of a music piece, wherein the selected parameters establish a hierarchy of categories for classifying the music piece into at least a music type having specific categories; and determining, in a hierarchical order and

for each selected category, when the music piece satisfies the category by analyzing a waveform of the music piece comprising a composite of music components.

Independent claim 31 recites means for determining a music type; and means for selecting categories of the determined music type to control the classifying of the received music piece, wherein said means for determining a music type determines when the received music piece comprises human singing and/or instrumental music based on the classification of the received music piece by analyzing a waveform of the received music piece comprising a composite of music components.

The Goodman et al. publication discloses utilizing metadata for each track to build hierarchical database of tracks (paragraphs [0053] and [0057]). However, the Goodman et al. publication does not relate to determining a music type based on waveform analysis. The Goodman et al. publication does not teach or suggest determining a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components; and classifying and labeling the music piece into a specific category of the determined music type, as recited in claim 1. The Examiner admits at page 2 of the final Office Action that "Goodman et al. do not mention expressly: determine a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components."

The Jiang et al. publication, considered individually or in combination with the Goodman et al. publication, the Stewart patent and/or the Kanevsky et al. patent, does not cure the deficiencies of the Goodman et al. publication. The Jiang et al. publication does not relate to classifying a music piece based on a hierarchy of music classification categories, wherein the music piece is classified and labeled into

a specific category of a determined music type. Rather, the Jiang et al. publication relates to analysis of an "audio signal 106," and merely mentions "audio signal" classification into speech, non-speech, silence, environment sound, music, music with vocals, and music without vocals" (paragraph [0023]). The Jiang et al. publication does not teach or suggest analyzing a waveform of a music piece comprising a composite of music components. Further, the Jiang et al. publication does not teach or suggest classifying a music piece based on a hierarchy of music classification categories, wherein the music piece is classified into a specific category of the determined music type, as recited in claim 1.

The Stewart et al. patent, considered individually or in combination with the Goodman et al. publication, the Jiang et al. publication and/or the Kanevsky et al. patent, does not cure the deficiencies of the Goodman et al. publication. The Stewart patent was applied for its disclosure of spectrographic displays for analyzing speech signals (e.g., col. 1, lines 13-16 and 61-68; and col. 10, lines 21-38). However, the Stewart et al. patent does not teach or suggest determining a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components; and classifying and labeling the music piece into a specific category of the determined music type, as recited in claim 1.

The Kanevsky et al. patent, considered individually or in combination with the Goodman et al. publication, the Jiang et al. publication and/or the Stewart patent, does not cure the deficiencies of the Goodman et al. publication. The Kanevsky et al. patent was applied for its disclosure of indexing segments of audio data file for storage in a database in accordance with identification tags of verified speakers (col.

1, lines 54-56). However, the Kanevsky et al. patent does not teach or suggest determining a music type based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components; and classifying and labeling the music piece into a specific category of the determined music type, as recited in claim 1.

Even if considered in combination as suggested by the Examiner, the Goodman et al. publication, the Jiang et al. publication, the Stewart patent and/or the Kanevsky et al. patent do not teach or suggest a method/system for automatic classification of music in which a music type is determined based on a detection of human singing by analyzing a waveform of the music piece comprising a composite of music components; and the music piece is classified and labeled into a specific category of the determined music type, as recited in claim 1, and as similarly recited in claims 22 and 34. The applied references also do not teach or suggest selecting parameters for controlling the classification of a music piece, wherein the selected parameters establish a hierarchy of categories for classifying the music piece into at least a music type having specific categories; and determining, in a hierarchical order and for each selected category, when the music piece satisfies the category by analyzing a waveform of the music piece comprising a composite of music components, as recited in claim 19. The applied references also do not teach or suggest means for determining a music type; and means for selecting categories of the determined music type to control the classifying of the received music piece, wherein said means for determining a music type determines when the received music piece comprises human singing and/or instrumental music based on the

classification of the received music piece by analyzing a waveform of the received music piece comprising a composite of music components, as recited in claim 31.

For the foregoing reasons, Applicant's claims 1, 19, 22, 31 and 34 are allowable. The remaining claims depend from the independent claims and recite additional advantageous features which further distinguish over the documents relied upon by the Examiner. As such, the present application is in condition for allowance.


All objections and rejections raised in the Office Action having been addressed, it is respectfully submitted that the application is in condition for allowance and a Notice of Allowance is respectfully solicited.

Respectfully submitted,

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